

### REMARKS

This Amendment is submitted in response to the Office Action dated February 11, 2005. In the Office Action, the Patent Office rejected Claims 1, 3-5, 8, 9 and 17-22 under 35 U.S.C. §103(a) as being unpatentable over *Fuse* (U.S. Patent No. 4,970,361) in view of *Lotito et al.* (U.S. Patent No. 5,988,676); and Claims 2 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Fuse* in view of *Lotito et al.* and further in view of *Smietana* (U.S. Patent No. 5,231,959).

By the present Amendment, Applicant amended Claims 1, 5, 6, 8 and 17 and added new Claims 23 and 24. Applicant asserts that the amendments to the claims and the remarks that follow overcome the rejections made by the Patent Office and place the application in condition for allowance. Notice to that effect is requested.

Applicant notes with appreciation that the Patent Office indicated that Claims 11-16 are allowable.

Further, Applicant notes with appreciation that the Patent Office indicated that Claims 6 and 7 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Accordingly, Applicant added Claim 23 incorporating the limitations of Claim 6 into Claim 1. Further, Applicant added Claim 24 to depend

from Claim 23. Applicant, therefore, submits that Claims 23 and 24 are allowable. Notice to that effect is requested.

In the Office Action, the Patent Office rejected Claims 1, 3-5, 8, 9 and 17-22 under 35 U.S.C. §103(a) as being unpatentable over *Fuse* in view of *Lotito et al.* Applicant asserts that the rejection is improper in view of Claims 1 and 17, as amended, and for the reasons that follow. Notice to that effect is requested.

In the Office Action, the Patent Office asserts that:

"Regarding Claims 1, 9, 17 and 18, *Fuse* discloses (see Fig. 1) an apparatus and a method for measuring displacement, comprising: a machine element having a body (8) defining an interior wherein the body has an interior surface and a length defined between a first end and a second end; a first wall (12) at the first end; a second wall (not labeled) at the second end substantially enclosing the interior; a shaft element (8a) movable with the machine element; a head element (8b) attached to the shaft element adjacent to the interior surface of the machine element; a light source (within 11) on the first wall wherein the light source emits light into the machine element; and a sensor (within 11) positioned to detect intensity of emitted light within the machine element which is not absorbed by the interior surface of the machine element wherein the intensity of light corresponds to a position of the head element within the machine element at any point between the first end and the second end."

Independent Claim 1, as amended, requires an apparatus for measuring displacement. The apparatus has a first wall at a first end of a body wherein the first wall is planar and further wherein the first wall abuts the body of a machine element.

Further, the apparatus has a light source on the first wall of the machine element wherein the light source extends inward with respect to the interior of the machine element. Moreover, the apparatus has a sensor positioned on the first wall of the machine element wherein the sensor detects intensity of emitted light within the interior of the machine element which is not absorbed by the coating on the interior surface of the machine element.

Independent Claim 17, as amended, requires a method for measuring displacement of a machine element. The method has the step of attaching a light source to the machine element at the first wall wherein the light source emits light into the interior of the machine element wherein the first wall is planar. Moreover, the method has the step of attaching a sensor to the machine element at the first wall wherein the shaft element is located between the sensor and the light source.

With respect to Claim 1, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a first wall at the first end of a body wherein the first wall is planar and further wherein the first wall abuts the body of a machine element as required by Claim 1. Further, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a light source on the first wall of the machine element

wherein the light source extends inward with respect to an interior of the machine element as required by Claim 1. Moreover, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a sensor positioned on the first wall of the machine element wherein the sensor detects intensity of emitted light within the interior of the machine element which is not absorbed by a coating on the interior surface of the machine element as required by Claim 1.

On the contrary, *Lotito et al.* merely teach an optical weight sensor for generating a signal indicative of the weight of a person or object seated or located in a vehicle seat. Further, *Fuse* teaches a displacement detector which is attached to the pressure cylinder to open and close the welding gun. *Fuse* teaches "the displacement detector comprises an optical distance sensor 11 disposed to face a piston 8b in the cylinder 8. The detector is attached to a front cover 8c located on the lower side of the pressure cylinder 8, the piston rod 8a being inserted through the front cover. The front cover 8c is constructed integrally with the lever portion 3a. A sensor-attaching portion 12 is formed on the front cover 8c which sticks out inside the lever portion 3a. The sensor 11 with a flange plate 11a attached to the lower end thereof is inserted into a through-hole 12a from below and the flange plate 11a is

fastened to the lower end of the sensor-attaching portion 12 by at least one screw." Moreover, *Fuse* teaches "the sensor 11 detects a distance of up to the lower surface of the piston 8b, with that surface reflecting rays of light from the sensor 11. Based on output thereof, it measures displacement of the piston rod 8a, that is, the degree of opening of the welding gun which is in a fixed relationship therewith."

With respect to Claim 17, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests the step of attaching a light source to the machine element at the first wall wherein the light source emits light into the interior of the machine element wherein the first wall is planar as required by Claim 17. Further, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests the step of attaching a sensor to the machine element at the first wall wherein the shaft element is located between the sensor and the light source as required by Claim 17.

On the contrary, *Lotito et al.* merely teach an optical weight sensor for generating a signal indicative of the weight of a person or object seated or located in a vehicle seat. As set forth above, *Fuse* teaches "the piston rod 8a being inserted through the front cover. A sensor-attaching portion 12 is formed on the front cover 8c which sticks out inside the lever

portion 3a. The sensor 11 with a flange plate 11a attached to the lower end thereof is inserted into a through-hole 12a from below and the flange plate 11a is fastened to the lower end of the sensor-attaching portion 12 by at least one screw."

Further, Applicant asserts that one of ordinary skill in the art at the time of Applicant's invention would never have been motivated to combine *Fuse* and *Lotito et al.* in the manner suggested by the Patent Office in formulating the rejections under 35 U.S.C. §103(a). It is submitted that the question under §103 is whether the totality of the art would collectively suggest the claimed invention to one of ordinary skill in this art. In re Simon, 461 F.2d 1387, 174 USPQ 114 (CCPA 1972).

That elements, even distinguishing elements, are disclosed in the art is alone insufficient. It is common to find elements somewhere in the art. Moreover, most if not all elements perform their ordained and expected functions. The test is whether the invention as a whole, in light of the teachings of the references in their entireties, would have been obvious to one of ordinary skill in the art at the time the invention was made. Connell v. Sears, Roebuck & Co., 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983).

It is insufficient that the art disclosed components of Applicant's invention, either separately or used in other

combinations. A teaching, suggestion, or incentive must exist to make the combination made by Applicant. Interconnect Planning Corp. v. Feil, 774 F.2d 1132, 1143, 227 USPQ 543, 551 (Fed. Cir. 1988).

With the analysis of the deficiencies of the *Fuse* and *Lotitio et al.* in mind, as enumerated above, no reason or suggestion in the evidence of record exists why one of ordinary skill in the art would have been led to modify *Fuse* with *Lotitio et al.* to produce the claimed invention. Therefore, *prima facie* obviousness has not been established by the Patent Office as required under 35 U.S.C. §103.

Even assuming that one having ordinary skill in the art could somehow have combined the references applied by the Patent Office, the references still lack the structural elements and novel steps positively recited in Claims 1 and 17, respectively. Namely, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a first wall at the first end of a body wherein the first wall is planar and further wherein the first wall abuts the body of an machine element as required by Claim 1. Further, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a light source on the first wall of the machine element wherein the light source extends inward with respect to the interior of the machine

element as required by Claim 1. Moreover, neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests a sensor positioned on the first wall of the machine element wherein the sensor detects intensity of emitted light within the interior of the machine element which is not absorbed by the coating on the interior surface of the machine element as required by Claim 1.

Neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests the step of attaching a light source to the machine element at the first wall wherein the light source emits light into the interior of the machine element wherein the first wall is planar as required by Claim 17. Neither *Fuse* nor *Lotito et al.*, taken singly or in combination, teaches or suggests the step of attaching a sensor to the machine element at the first wall wherein the shaft element is located between the sensor and the light source as required by Claim 17.

In view of the foregoing remarks and amendments, Applicant respectfully submits that the rejection of Claims 1, 3-5, 8, 9 and 17-22 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

With respect to the rejection of Claims 2 and 10 under 35 U.S.C. §103(a) as being unpatentable over *Fuse* in view of *Lotito*

et al. and further in view of *Smietana*, Applicant respectfully submits that the rejection has been overcome by the amendments and for the reasons that follow. In the Office Action, the Patent Office asserts "*Fuse* and *Lotito* do not specifically disclose a coating on the shaft or the head element. *Smietana* teaches (see col. 3, lines 15-20) coating the shaft or the head element of a machine element."

Claim 2 requires a coating on the shaft element. Claim 10 requires a coating on the head element.

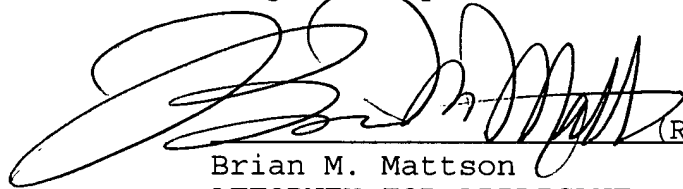
*Smietana*, however, fails to teach or to suggest the elements of the present invention which are not taught by *Fuse* or *Lotitio et al.* as required by amended independent Claim 1 from which Claims 2 and 10 depend. Accordingly, the rejection of Claims 2 and 10 under 35 U.S.C. §103(a) has been overcome and should be withdrawn. Notice to that effect is requested.

Claims 2-10 depend from Claim 1; and Claims 18-22 depend from Claim 17. These claims are further believed allowable over the references of record since each sets forth additional structural elements and novel steps of Applicant's apparatus and method for measuring displacement, respectively.

In view of the foregoing remarks and arguments, Applicant respectfully submits that all of the claims in the application are in allowable form and that the application is in condition

for allowance. If, however, any outstanding issues remain, Applicant urges the Patent Office to telephone Applicant's attorney so that the same may be resolved and the application expedited to issue. Applicant requests the Patent Office to indicate all claims as allowable and to pass the application to issue.

Respectfully submitted,



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I hereby certify that this Amendment and Check for \$150.00 are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 5, 2005.



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